
بسم الله الرحمن الرحيم

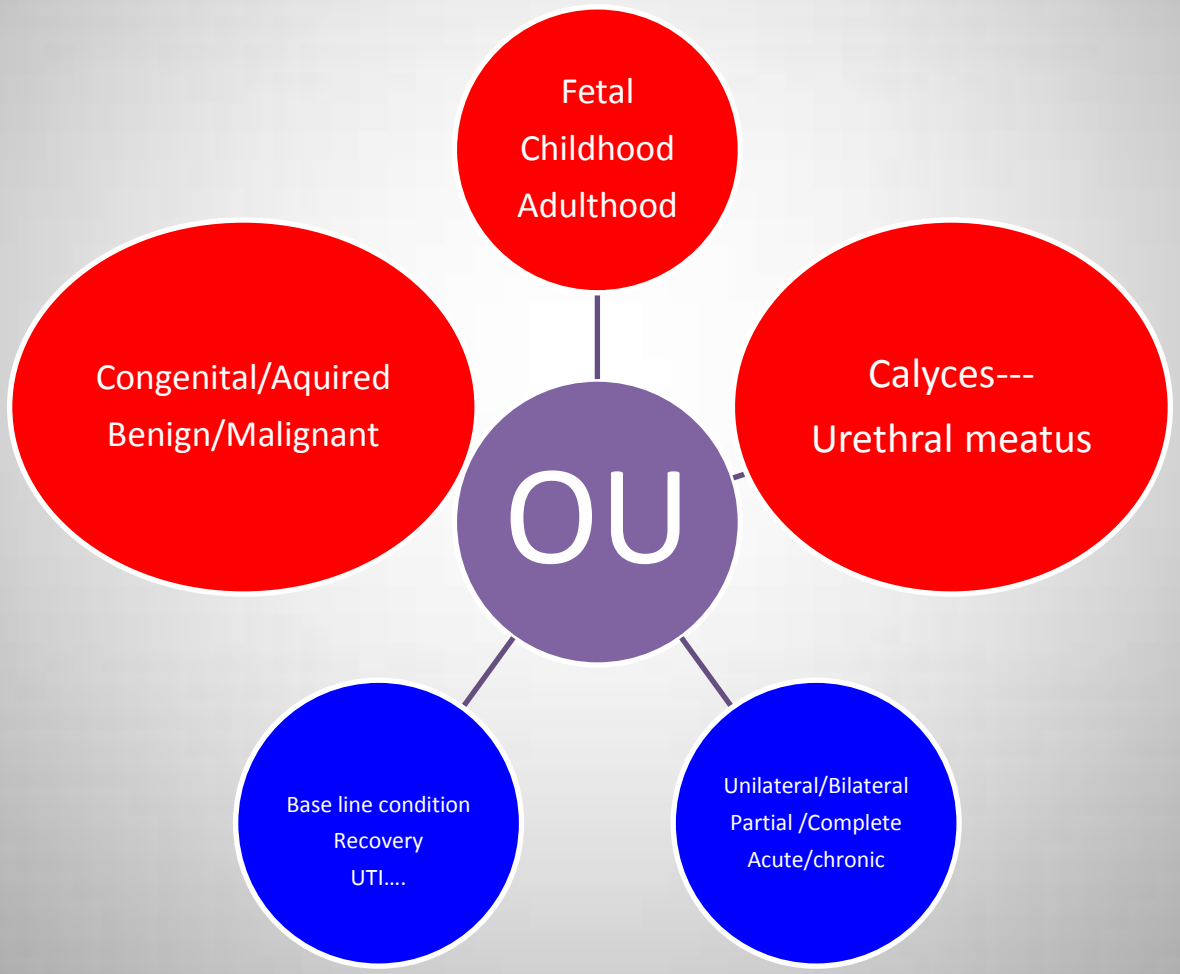
Obstructive Uropathy

Ahmed S. El-Hefnawy, MD
Lecturer in Urology
Urology and Nephrology Center
Mansoura University

Standardization of definitions

- **Obstructive Uropathy:** functional or anatomic obstruction of urinary flow at any level of urinary tract.
- **Obstructive nephropathy:** obstruction causes functional or anatomic renal damage.
- **Hydronephrosis:** dilatation of the renal pelvis or calyces.

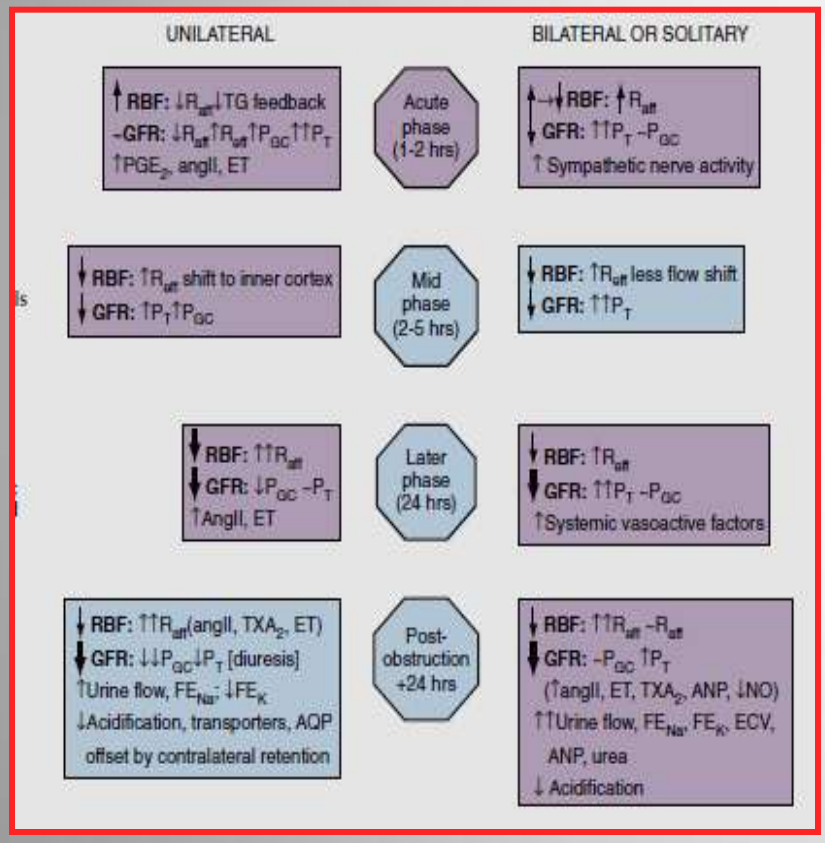
Obstructive Uropathy
OU

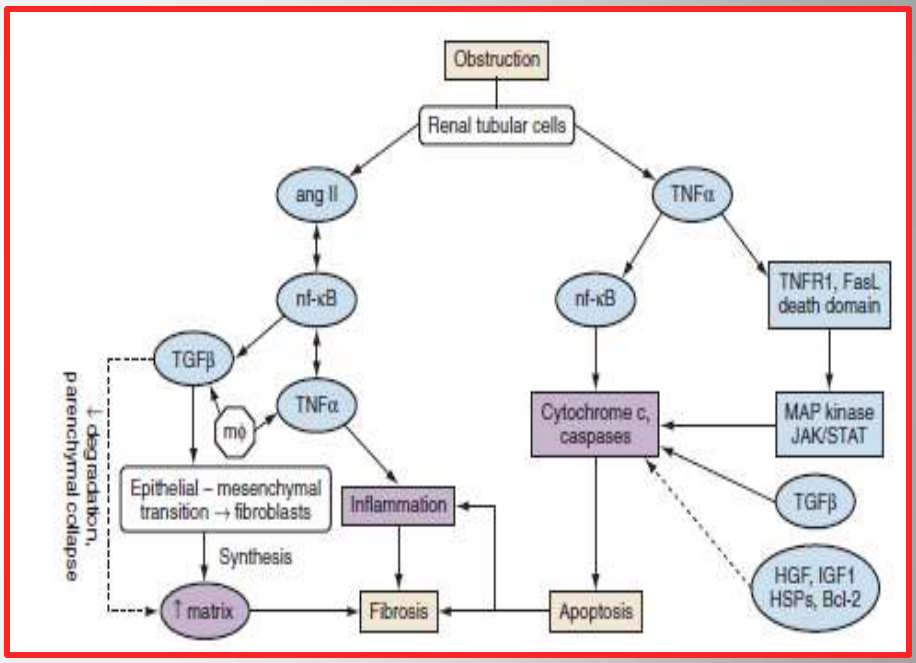


Possible causes of OU

Renal	
Congenital	Polycystic kidney
	Renal cyst
	Peripelvic cyst
	Ureteropelvic junction obstruction
Neoplastic	Wilms tumor
	Renal cell carcinoma
	Transitional cell carcinoma of the collecting system
	Multiple myeloma
Inflammatory	Tuberculosis
	Echinococcus infection
Metabolic	Calculi
Miscellaneous	Sloughed papillae
	Trauma
	Renal artery aneurysm
Ureter	
Congenital	Stricture
	Ureterocele
	Obstructing megaureter
	Retrocaval ureter
	Prune-belly syndrome
Neoplastic	Primary carcinoma of ureter
	Metastatic carcinoma
Inflammatory	Tuberculosis
	Amyloidosis
	Schistosomiasis
	Abscess
	Ureteritis cystica
	Endometriosis
Miscellaneous	Retroperitoneal fibrosis
	Pelvic lipomatosis
	Aortic aneurysm
	Radiation therapy
	Lymphocele
	Trauma
	Urinoma
	Pregnancy
	Radiofrequency ablation
Bladder and Urethra	
Congenital	Posterior urethral valve
	Phimosis
	Hydrocolpos
Neoplastic	Bladder carcinoma
	Prostate carcinoma
	Carcinoma of urethra
	Carcinoma of penis
Inflammatory	Prostatitis
	Paraurethral abscess
Miscellaneous	Benign prostatic hypertrophy
	Neurogenic bladder
	Urethral stricture

Dilemma of pathogenesis





Hundreds of publications

Pathophysiology

Total unilateral obstruction

Phase	Time	Renal blood flow	Intrapelvic pressure	
I	1.5 hours			Pre glomerular VD Prostaglandins/NO Diuresis
II	Next 4 hours			Preglomerular VC AGII, Throx II, ADH,…
III	after			Reduction of GFR Increase venous and lymphatic absorption

Pathophysiology
why pain??

obstruction……..> increase intra luminal pressure.

- A- stimulation of nerve endings in lamina propria.
- B- expansion of renal capsule and collecting system
- C- hyper peristalsis of smooth ms… spasm

Diagnosis of Acute obstructive Uropathy

Diagnosis of Urinary Tract Stones: An Overview

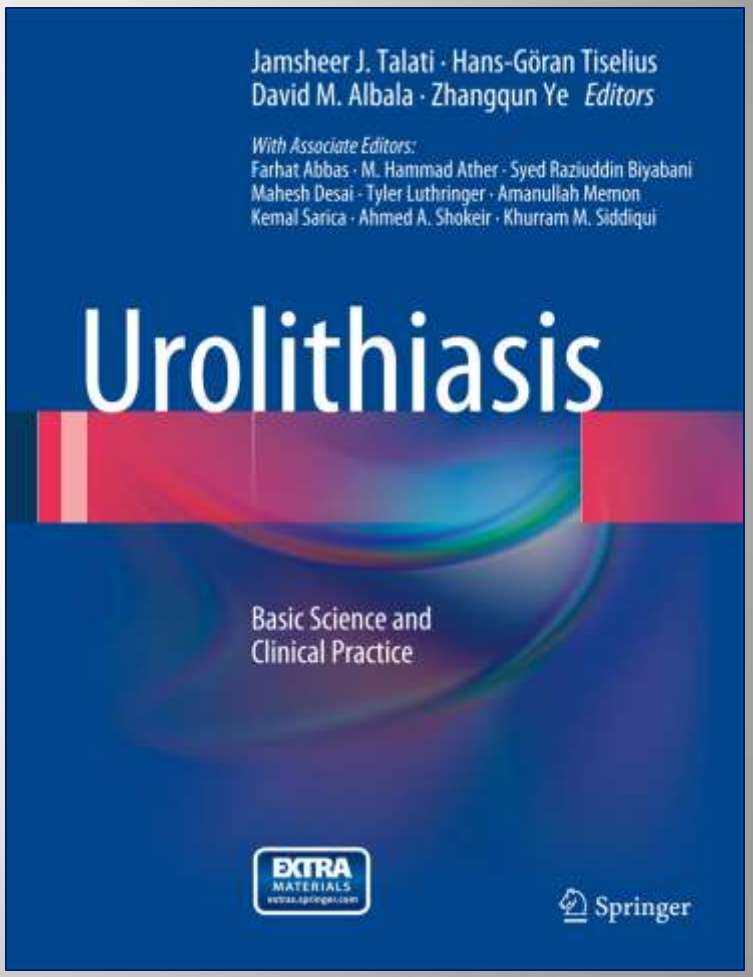
30

Ahmed S. El-Hefnawy and Ahmed A. Shokeir

Table 30.2 Basic urine and blood analysis for metabolic workup in emergency stone patient

Urine
Urinary sediment/dipstick test out of spot urine sample
Red cells
White cells
Nitrite
Urine pH level by approximation
Urine culture or microscopy
Blood
Serum blood sample
Creatinine
Uric acid
Ionized calcium
Sodium
Potassium
Blood cell count
CPR
If intervention is likely or planned: coagulation test (PTT and INR)

CRP C-reactive protein, *INR* international normalized ratio, *PTT* partial thromboplastin time



Diagnosis of Acute obstructive Uropathy

KUB

Detect most of stones
Idea about stone composition

<u>Limitations</u>
Radiolucent stones
Presence of gases

<u>Current application</u>
Follow up.

Diagnosis of Acute obstructive Uropathy

Grey scale US

Most commonly used tool for initial evaluation

Cortical thickness/ dilatation/ echogenicity

Stone size and location

Doppler/ Resistive index.
Contrast enhanced US

Diagnosis of Acute obstructive Uropathy

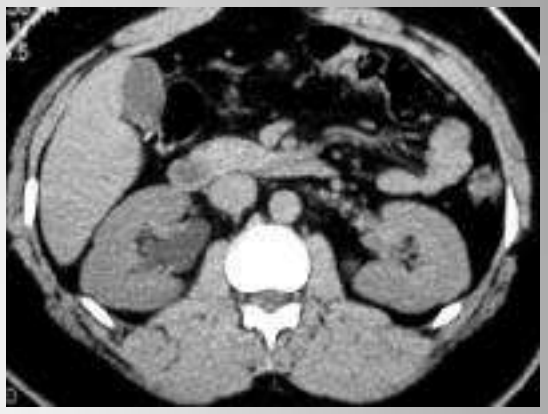
IVU

Gold standard (past).

Diagnosis of Acute obstructive Uropathy

Spiral CT

GOLD STANDARD



Treatment of a case with acute obstruction

The Management of a Patient with an Acute Stone Problem

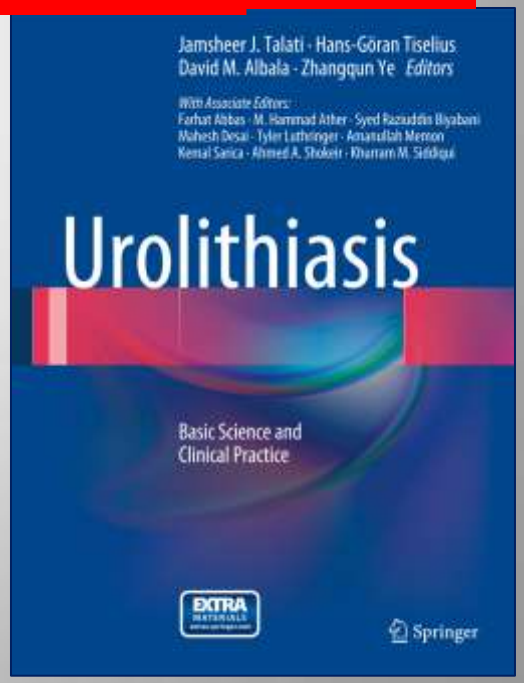
44

Ahmed S. El-Hefnawy, Ahmed Abed, and Ahmed A. Shokeir

Pain Relief + Drainage

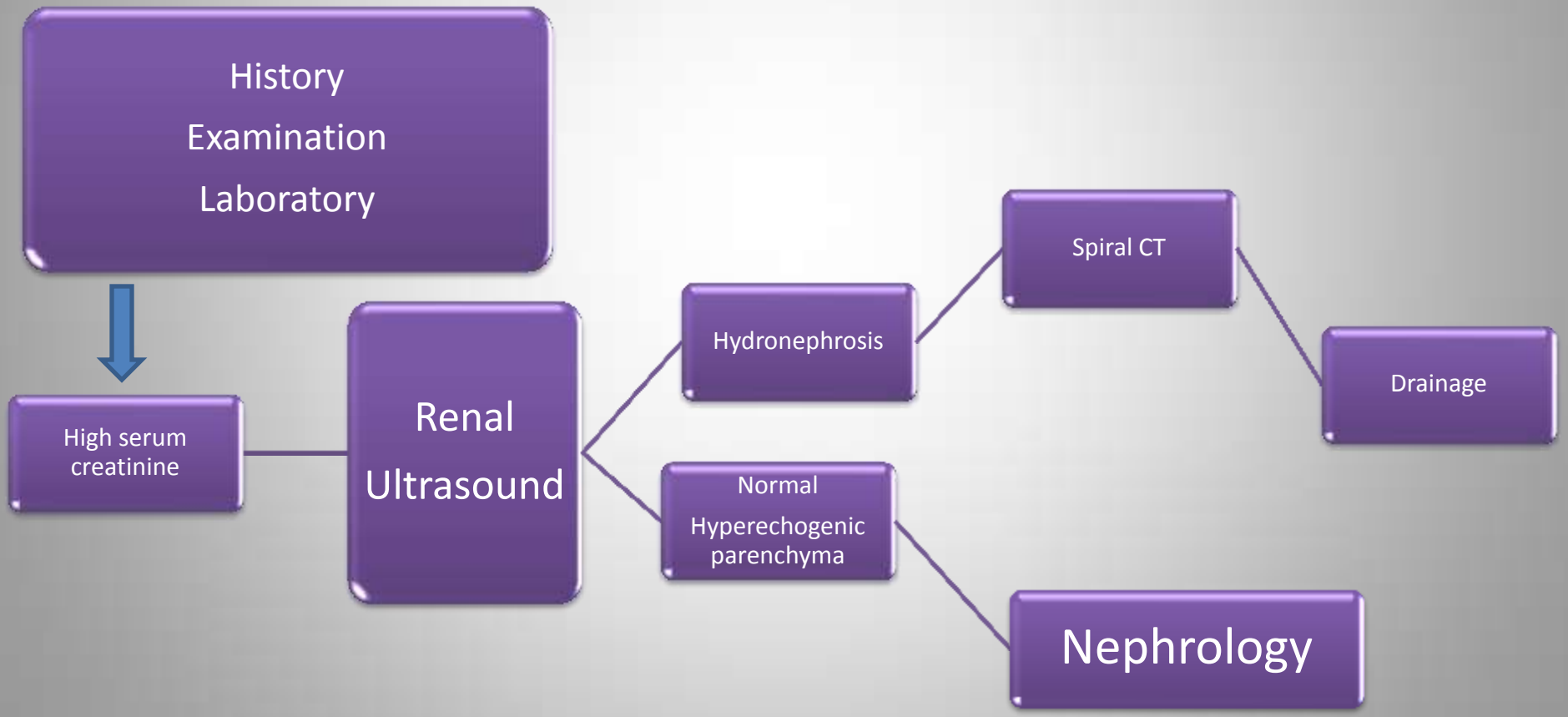
Conclusion

Unless contraindicated, NSAIDs represent the first line of pain relief in cases with RC. Better efficacy and proven safety of combination protocols with opioids has been provided; however, a standard regimen protocol in ERs is still lacking. For septic patients with obstructing stones, kidneys must be urgently drained using either PCN or ureteral stenting. Alpha blockers in combination with corticosteroid may increase stone expulsion compared with alpha blockers alone. New management modalities enhance recoverability of renal function after obstructions by urolithiasis are warranted.



- anuria /olioguria
- what should I do??

It is simple ,
Just follow the track



Case discussion
Based on true story

- 23- year old female
- Skin rashes, dysentery
- Serum creatinine 4.2 mg/dl
- Referral to Nephrology Clinic.

Please refer her early

Case scenario 1:

- R/ Calcimate…
- R/One alpha…
- R10/……..
- ----------

One year later:

- Prepare yourself for Tx

Case scenario 2:

- Repair of myelomeningocele shortly after birth
- Renal US : Bilateral hydronephrosis.
- ----------
- VCUG: Bilateral G III VUR
- Video UD: Detrusor overactvities.
- R/ antimuscarinics/ Botox…

Case discussion
Based on True story

- 63- year old male.
- Recurrent attacks of vomiting.
- DM , 5 years on oral hypoglycaemic
- RBS: 550 mg/dl , acetone in urine, Sr Cr: 8.9 mg/dl

Please refer him early

Case scenario 1

- Correct dehydration
- Lower bl glucose level
- Control any infection

  THAT IS IT !!!!!
- … may be in need for hemodialysis to improve the general condition of the patient!!!!
- …..may be in need to be maintained on CHD

Case scenario 2

Please

Do	Do not forget
All these measures	

Renal US **PVR**

Hydronephrosis and high PVR

Fix a urethal catheter

Control of acute insult

DRE

PSA

Refer to Urodynamic

Take home message

- Please do not forget *US* in any case with high serum creatinine
- Obstructive uropathy does not always mean stones or strictures
- We have to remember *functional obstruction*:

  “poor young girl with neuropathic bladder”

  “fragile old man with long standing untreated BPH”

Case discussion
Based on True story

- Request : From Gyn resident

To Nephro resident To Urology resident

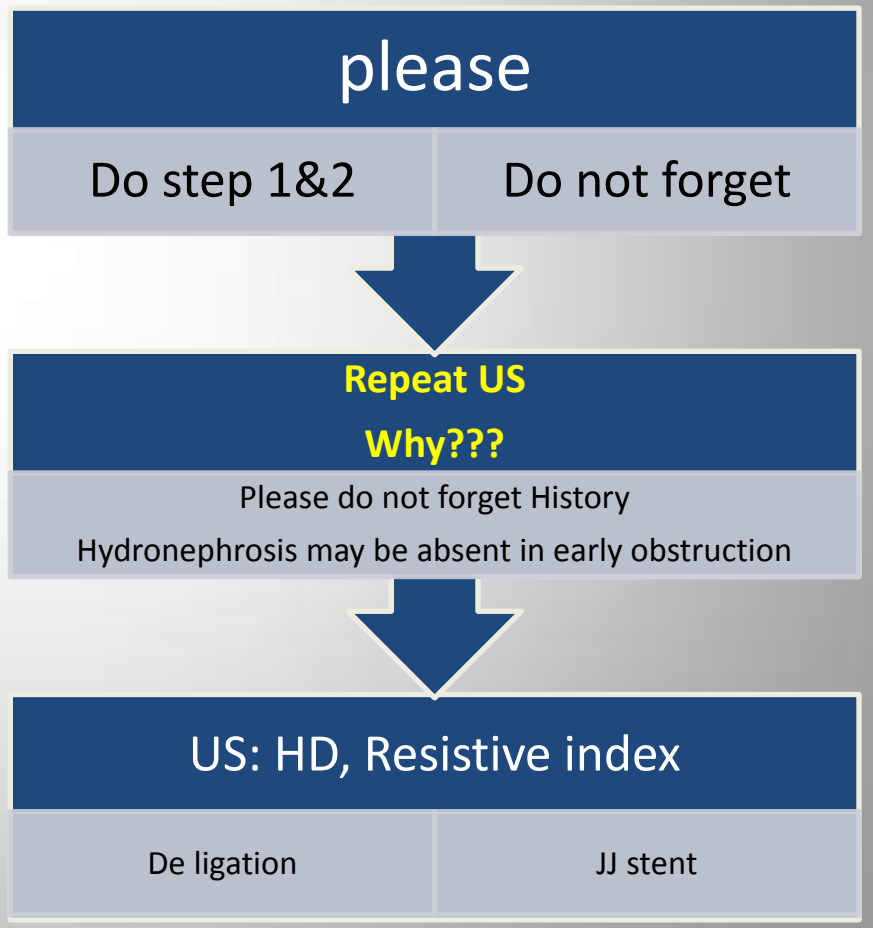
- 32 year old female, primigravida, placenta previa
- CS : placenta percreta, massive hamorrahge, bilateral internal iliac arteries ligation.
- Post operative: complete anuric, Sr creatinien: 3 mg/dl, Hb : 6 gm after 4 units of blood tx.
- Renal US: Normal both kidneys .

Please do not forget follow up

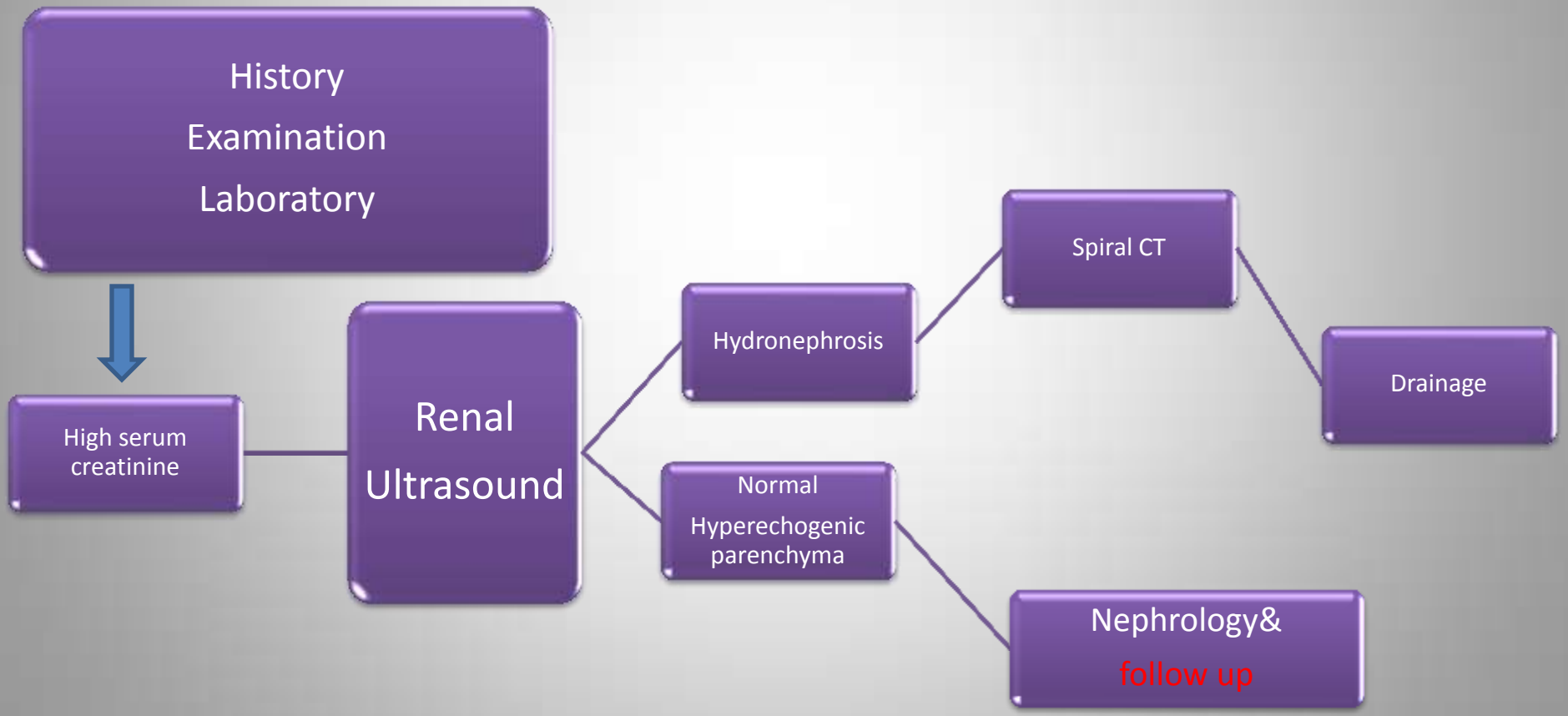
Case scenario 1:

- *Urologist:* no back pressure ..not my case. Good luck.
- *Nephrologist:*
- DD: ATN due to …,…,…
- Please do: Na, K, bilirubin,……
- Please correct: dehydration, anemia,….
- Still anuric.. Sepsis… DIC……

Case scenario 2:



It is simple ,
Just follow the track



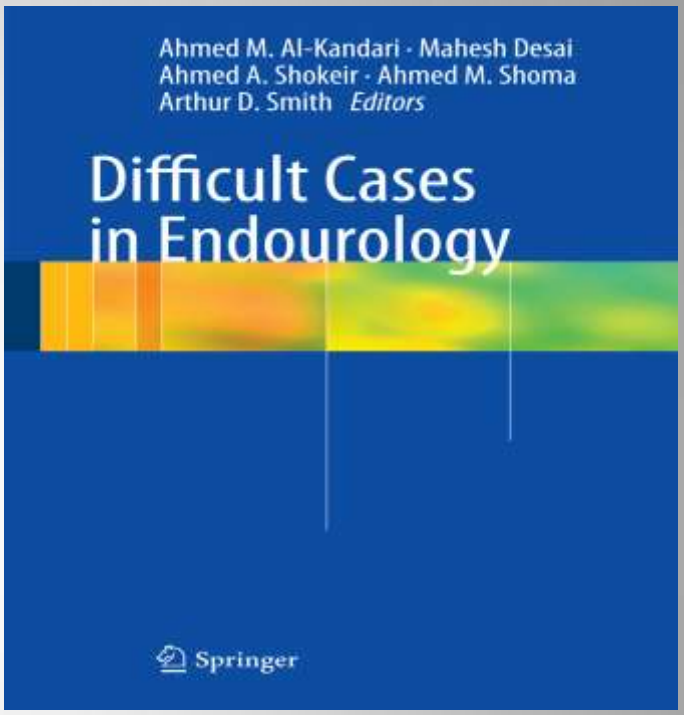
Graft obstruction

Uretral obstruction after kidney transplantation:

- commonest : 2-10%. 80% in distal ureter or at UV junction.

Usual causes	Unusual causes
1. Narrowing of ureterovesical junction secondary to ischemia or rejection	1. Papillary necrosis causing hydronephrosis
2. Technical error in ureteroneocystostom	2. Ureteropelvic junction compression caused by crossing vessels of renal allograft
3. Kinking of the ureter	3. Postural ureteral obstruction
4. Calculi	4. Vesical wall acting as valve causing obstruction to the lower end of the ureter
5. Fungus balls	5. Ureteral torsion
6. Clots	6. Sliding hernia containing the ureter
7. Extrinsic compression by fluid collections	7. Urothelial ureteric lesions due to rejections
	8. Ovarian tumor
	9. Cytomegalovirus (CMV) ureteritis
	10. Extrinsic scar of abdominal wound causing fibrosis and compression

Strictures in Tx ureters

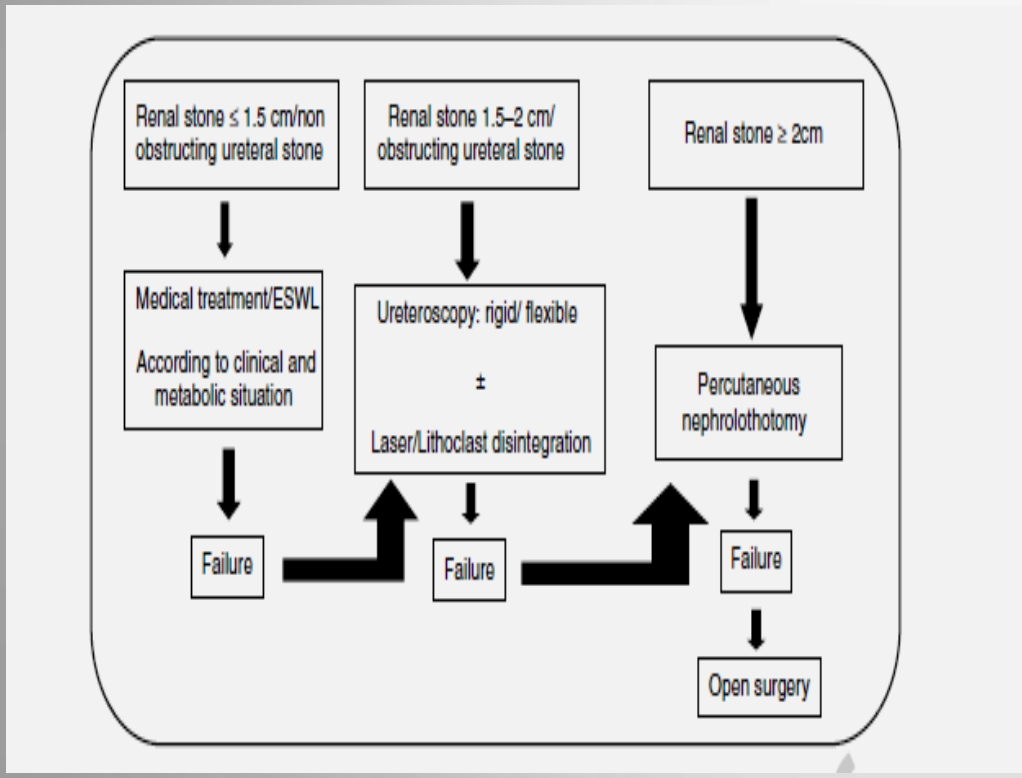


Endourological Management of Urological Complications Following Renal Transplantation

18

Ahmed S. El-Hefnawy, Mohamed M. Elsaadany, Shady A. Soliman, Yasser Osman, Ahmed M. Shoma, and Ahmed A. Shokeir

Graft obstruction with stone



Take home message

- Early detection of graft obstruction is of paramount importance.

- Persistent statement in discussion:

  “these better results regarding graft and patient survival could be attributed to close monitoring and precise follow up of patients”

Thank you